

# High-Density Plasma Source

## Abstract of Disclosure

The present invention relates to a plasma source. The plasma source includes a cathode assembly having an inner cathode section and an outer cathode section. An anode is positioned adjacent to the outer cathode section so as to form a gap there between. A first power supply generates a first electric field across the gap between the anode and the outer cathode section. The first electric field ionizes a volume of feed gas that is located in the gap, thereby generating an initial plasma. A second power supply generates a second electric field proximate to the inner cathode section. The second electric field super-ionizes the initial plasma to generate a plasma comprising a higher density of ions than the initial plasma.